

Depression in Long-Term Care

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Objectives: To review the diagnosis and treatment of depressive disorders in long-term care settings.

Methods: A review of the literature on the diagnosis and treatment of depression in long-term care.

Results: Up to 35% of residents in long-term care facilities may experience either major depression or clinically significant depressive symptoms. These symptoms are often not recognized for at least 2 reasons: depression is not the focus of physicians and nursing personnel and depression is frequently comorbid with

other problems that are common in long-term care, such as cognitive impairment, medical illness, and functional impairment. Nevertheless, depression, once diagnosed, can be treated effectively in the nursing home setting. The foundation of treatment is pharmacotherapy, yet other therapeutic approaches, such as exercise and psychological therapies may be of value.

Conclusion: Depression, although often unrecognized in long-term care, is a treatable condition and deserves the attention of the entire medical and nursing staff. (*J Am Med Dir Assoc* 2008; 9: 82–87)

The single most significant change in US population demographics over the past 50 years is the aging of the population. In 2003, 35.9 million people were aged 65 and older. By 2030, this number is projected to be twice as large, growing to 72 million.¹ As a result of this growth, the population of older adults in nursing homes is projected to increase over the next several years.² Depression is the most common cause of morbidity and decreased quality of life in this expanding demographic group that forms the majority of long-term care residents.³ The aim of this review is to improve awareness regarding depression in long-term care settings, with a goal of improving recognition and management of depression in nursing home residents.

Prevalence of depressive disorders in the long-term care setting varies across studies because of methodological differences. In one large study of a long-term care facility, 12.4% experienced major depression and 35.0% experienced significant depressive symptoms.⁴ In another study,⁵ depression was found in 20.0% of patients admitted to a long-term care facility. Incidence of major depression at 1 year was 6.4%. In yet another nursing home study,⁶ prevalence of major depressive disorder among testable subjects was 14.4% (15.0% could not be tested) and prevalence of minor depression was 17.0%. Less than 50.0% of cases were recognized by nursing and

social work staff. Thus, depressive disorders are widely prevalent in nursing homes, contributing substantially to disability in this frail population, and yet are often overlooked.

DIAGNOSTIC CRITERIA

In the nursing home setting, 4 different clinical entities are particularly relevant, namely major depressive disorder, dysthymic disorder, minor depression (and other similar constructs), and depression concurrent with Alzheimer's disease (Table 1).

MAJOR DEPRESSIVE DISORDER

To meet criteria for a diagnosis of major depressive disorder, the older adult must exhibit at least 1 of 2 symptoms, depressed mood and/or lack of interest, for at least 2 weeks. In the nursing home, older adults are more likely to complain of loss of interest rather than overt depressed mood. Even so, the diagnosis can be made using the criteria listed below. For a diagnosis of major depression, the older adult must exhibit an additional 4 or more of the following symptoms for at least 2 weeks. Older adults tend to differ somewhat from middle-aged adults in the presentation of these criteria symptoms.⁷

- Feelings of worthlessness or inappropriate guilt (guilt is less frequent among older adults than among younger adults)
- Diminished ability to concentrate or make decisions (older adults are no more likely to complain of difficulty with concentration and memory than younger adults unless they experience comorbid depression and dementia [see later in this article] but are more likely to exhibit

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Table 1. *Differential Diagnosis of Depressive Symptoms in Nursing Home Patients*

Major Depressive Disorder: Presence of at least 5 of 9 depressive symptoms for at least 2 weeks and impaired social functioning (see text for specific symptoms)
Minor Depression: Not meeting above criteria but significant subthreshold symptoms
Dysthymia: Low-grade depression symptoms that are chronic (>2 years)
Depression in Alzheimer's disease: Specific criteria proposed that require only 3 symptoms, with irritability as a qualifying symptom (see text for details)

positive findings on psychological testing than younger adults when depressed)

- Fatigue (a common symptom regardless of age in the moderate to severely depressed and complicated by comorbid physical illness)
- Psychomotor agitation or retardation (either can be seen in late life and agitation is frequent in the nursing home)
- Increase or decrease in weight or appetite (weight loss is very common, whereas weight gain is rarely seen in older patients)
- Recurrent thoughts of death or suicide (older adults may ruminate about death during a depressive episode although they are not as likely to express suicidal thoughts as younger adults⁸).

Psychotic depression is a subtype of major depression that is frequently seen in the elderly, although it is more commonly seen in inpatients and in patients in long-term care than community samples of the elderly.⁹ It is usually characterized by severe depressive symptoms, together with delusions and/or hallucinations. The most common delusions seen in the elderly are somatic and persecutory delusions.¹⁰ In the nursing home, an older depressed patient may be overtly delusional yet cooperative and easily managed because of decreased functional capacity.

Dysthymic disorder is a less severe but more chronic variant of depression. To meet criteria the older adult must experience symptoms most of the time for at least 2 years.¹¹ Although it is rare for dysthymic disorder to start in late life, it can persist into late life from midlife.^{12,13} Therefore, chronic but less severe depression in the nursing home may not so much be secondary to living situation as a pattern laid down many years before admittance to long-term care.

The term “minor depression” is not a formal diagnosis in DSM-IV-TR, although symptoms for minor depression are suggested in the Appendix. The diagnosis is made when the core symptoms are present along with 1 to 3 additional symptoms for at least 2 weeks. The construct of “subthreshold” or “subsyndromal” depression is an important one in the geriatric population, possibly as important as major depressive disorder itself, given the high prevalence of subthreshold depressive symptoms in this population, both in community and long-term care samples, with implications for determining threshold for treatment.

Minor depression variously defined has been associated with impairment similar to that of major depression, including impaired physical functioning, disability days, poorer self-rated health, use of psychotropic medications, perceived low social support, female gender, and being unmarried.^{14,15} Studies have attempted defining this construct with suggested cut-off scores on depression rating scales, with one study suggesting a score of 16+ on the Center for Epidemiologic Studies Depression Scale (CES-D) but not meeting criteria for major depression,¹⁴ and another suggesting a score of 11 to 15 on the CES-D.¹⁵ Another variant described in the elderly cohort is “depression without sadness,” a presentation of depressive symptoms without actual sadness or low mood.¹⁶ There are several additional subtypes suggested, and a future challenge for the field of geriatric psychiatry is to develop an agreed upon definition of what constitutes clinically significant subthreshold depression that warrants treatment.

Some investigators have recently proposed criteria for “depression of Alzheimer's disease (AD).”¹⁷ In persons who meet criteria for a dementia of the Alzheimer's type, the appearance of 3 of the following symptoms would qualify for the diagnosis: depressed mood, anhedonia, social isolation (not a symptom criteria for major depression), poor appetite, poor sleep, psychomotor changes, irritability (not a symptom of major depression), fatigue and loss of energy, feelings of worthlessness, and suicidal thoughts. Psychotic symptoms such as delusions and hallucinations can be present not only in dementia, but also in dementia comorbid with depression. Therefore, when depression and psychosis coexist in an AD patient, both should be diagnosed.

SCREENING FOR DEPRESSION IN NURSING HOMES

Given the magnitude of the problem of depression in nursing homes, adequate screening would be the first important step in addressing this issue. The minimum data set, a federally mandated periodic assessment of nursing home residents, includes information on mood and anxiety symptoms. Unfortunately, the validity of this instrument for diagnosing depression compared to standard screening tools has been found to be poor.^{18–21} The Geriatric Depression Scale (GDS) is the most studied screening tool in cognitively intact nursing home patients.^{22–25} The scale is well validated in this popu-

Table 2. *Workup of Depression in Nursing Home Patients*

- Screening: Geriatric Depression Scale
- Present illness history including assessment of suicidal ideation, current medications
- Past history including antidepressant trials
- Cognitive screen: MMSE
- Laboratory tests: Basic metabolic panel, complete blood count, TSH, free T4, serum B12 and folate levels, serum albumin in case of poor nutrition
- EKG if a tricyclic antidepressant is being considered
- Polysomnography if a sleep disorder is suspected
- MRI to confirm diagnosis of vascular depression

MMSE, mini-mental state exam; TSH, thyroid-stimulating hormone; EKG, electrocardiogram; MRI, magnetic resonance imaging.

Table 3. Comparison of Antidepressants Commonly Used in Nursing Home Patients

Antidepressant	Starting Dose; Usual Dose Range	CYP450 Enzyme Inhibition	Generic Availability
Fluoxetine	10 mg; 20–30 mg	Inhibits 3A4, 2C19, and 2D6	Yes
Paroxetine	10 mg; 20–30 mg	Inhibits 2D6	Yes
Sertraline	25 mg; 50–100 mg	Mild 2D6 inhibition	Yes
Citalopram	10 mg; 20–30 mg	Mild 1A2, 2C19, and 2D6 inhibition	Yes
Escitalopram	5 mg; 10–20 mg	Mild 1A2, 2C19, and 2D6 inhibition	No
Venlafaxine (extended release)	37.5 mg; 75–150 mg	Mild 2D6 inhibition	No
Bupropion (slow release)	150 mg; 150–300 mg	Inhibits 2D6	Yes
Mirtazapine	7.5 mg; 15–45 mg	No significant effect	Yes

lation for both major and minor depression, and has high sensitivity and specificity in its 30-item version. The shorter versions of the GDS are also well validated, with the 10-item GDS being recommended as the best tradeoff between ease of administration and sensitivity in nursing home patients.²⁵ The Cornell Scale for Depression in Dementia²⁶ is a validated instrument for demented patients in general although it has not been specifically validated in demented patients in nursing homes. The scale is a semi-structured interview of an informed caregiver, and thus its validity in the nursing home setting cannot be assumed. However, it has been compared to the GDS and found to have better validity in demented patients than the GDS.²⁷

DIAGNOSTIC WORKUP OF DEPRESSION

As defined by DSM-IV-TR, the diagnosis of major depression can be made on the basis of the presence of 5 of 9 depressive symptoms. In addition to the current symptomatology, an adequate assessment also includes personal or family history of past depressive episodes, history of suicidality, and history of substance abuse, as all of these can influence prognosis for the current episode of depression (Table 2). Also important are past treatment trials and response (to guide current treatment), and assessment of current suicidal ideation and imminent risk of self-harm (to guide location of treatment, inpatient versus outpatient). Cognitive status should be assessed with the Mini-Mental State Examination (MMSE), given the high likelihood of comorbid depression and cognitive dysfunction.²⁸ Because a variety of medical conditions can mimic depression in old age, a minimum workup includes basic metabolic panel, complete blood count, thyroid function tests, and serum vitamin B12 and folate levels. Nutritional status is important to evaluate in the depressed elder, especially the oldest old, given the risk for frailty and failure to thrive in depressed elders.^{29,30} Laboratory tests need not be repeated if they have been performed in the past year, or since onset of depressive symptoms, whichever is more recent. A review of current medications is also essential because of the long list of medications that can cause symptoms similar to those of depressive disorder. Unless a medication is thought to definitively contribute to significant depressive symptoms and safer alternatives are available,

discontinuation of medications for other indications may not be a viable option in this population, which often has significant medical comorbidity.

ETIOLOGY

Biological, psychological, and social factors contribute to the etiology of depression in nursing home patients. Biological factors include a strong association with medical illnesses such as cardiovascular disease, Parkinson's disease, hip fractures, pain, and urinary incontinence. "Vascular depression" is a term used to describe late-life depression associated with vascular changes in the brain, and characterized by executive dysfunction.³¹ Changes in the brains of depressed older patients seen on imaging include structural abnormalities in areas related to the cortical-striatal-pallidal-thalamus-cortical pathway,³² smaller size of the orbital frontal cortex in late-life depression,³³ and smaller left hippocampal volumes in depressed patients who go on to develop dementia.³⁴

The most important psychosocial factors that play a role in the development of depression include the losses inherent in old age, such as those of health or significant others, as well as loneliness experienced by patients in nursing homes. Patients who identify religion as the most important factor in coping, termed "religious coping," show improved emotional and physical health,³⁵ suggesting that religion may be a protective factor in development of depressive symptoms.

TREATMENT

The evidence base for treatment of depression in the elderly is expanding, with evidence for both biological and psychological therapies.

Biological Treatment

The mainstay of depression treatment in the elderly is antidepressant medication. Because of their better tolerability profiles, the selective serotonin reuptake inhibitors (SSRIs) and other newer antidepressants like bupropion are preferred to older tricyclic antidepressants (TCAs) (Table 3). Although there are several double-blind studies that compare individual TCAs to individual SSRIs, finding both equally efficacious, the majority of these do not have a placebo-control group.

The SSRIs that have shown efficacy based on primary

Table 4. *Treatment of Depression in Nursing Home Patients*

Major depressive disorder: Citalopram, sertraline, or paroxetine. If no response at 6 weeks, then switch to venlafaxine (extended release), or bupropion (slow release), or mirtazapine. If no response, consider ECT. Add psychotherapy if appropriate
Psychotic depression: SSRI + antipsychotic medication, or ECT
Persistent minor depression or dysthymia: Either SSRI or psychotherapy alone
Depression comorbid with Alzheimer's disease: SSRI and/or behavioral therapy

ECT, electroconvulsive therapy; SSRI, selective serotonin reuptake inhibitor.

outcome measure in double-blind placebo controlled studies of elderly patients include sertraline,³⁶ citalopram,³⁷ paroxetine,³⁸ mirtazapine,³⁹ and bupropion.⁴⁰ There are at least 2 placebo-controlled trials of fluoxetine^{41,42} and at least 1 trial each of venlafaxine⁴² and escitalopram⁴³ in the elderly that failed to show that the drug was significantly better than placebo in the primary outcome measure. We could not identify any studies of duloxetine with antidepressant response as a primary outcome measure in the elderly population. The failed trials and modest efficacy seen in geriatric depression trials in general can be attributed to high rates of placebo response even in large well-designed studies.^{36,41} In the only placebo-controlled trial of depression in the “old-old” (age 75 and above), citalopram was no more effective than placebo.⁴⁴ Of note, the subgroups of more severely depressed patients showed greater medication-placebo differences than those with less severe depression, suggesting that patients with less severe depression may have responded to the psychosocial aspects of treatment in a clinical trial, but more severely depressed responded only to the medication. Clinical trials of treatment of depression in the nursing home setting are very few. We found one placebo-controlled study of paroxetine in the treatment of non-major depression in nursing home patients that did not find paroxetine to be superior to placebo.⁴⁵

The decision about antidepressant choice in older adults is guided as much by efficacy as by the side-effect profile of the drug. Although the newer antidepressants are far better tolerated than TCAs, tolerability issues remain. With almost all antidepressants, there can be initial gastrointestinal (GI) side effects, headaches, and increased anxiety, most of which subside with time. Certain side effects of SSRIs can be even more serious in the elderly. Elderly inpatients on SSRIs or venlafaxine are at definite risk for developing hyponatremia (39% in one study) due to syndrome of inappropriate secretion of antidiuretic hormone and should have sodium levels checked before and after commencement of antidepressant medications.⁴⁶ Other serious side effects reported with SSRIs include the risk of falls⁴⁷ and hip fractures,⁴⁸ serotonin syndrome⁴⁹ (lethargy, restlessness, hypertonicity, rhabdomyolysis, renal failure, and possible death), gastrointestinal bleeding,⁵⁰ and insomnia. In fact, SSRIs can worsen restless legs and periodic limb movements and further contribute to sleep difficulties.⁵¹

At times, the side-effect profile of a drug can be used to therapeutic advantage. For example, when insomnia is a prominent complaint in geriatric depression, mirtazapine may be the drug of choice. Alternately, a combination of an SSRI and trazodone can also be effective. Although trazodone is often favored as a sleep aid in general, it is important to remember that there are no data supporting its use in the treatment of chronic insomnia in the absence of depression. Given its side-effect profile in the elderly (orthostasis and rare but serious priapism), it should be used judiciously and at low doses in this population.

In the STAR*D trial,⁵² which is the most significant effectiveness study of antidepressants to date (the majority of the sample had significant medical and psychiatric comorbidities), the response rates (47%) and remission rate (28%) after 14 weeks of an SSRI (citalopram) were not significantly different for older adults (approximately 25% of the sample of 2876 was over 51 years of age).

A number of studies document the efficacy of antidepressant therapy for treating depression in dementia.^{43,53,54} In general, SSRIs (sertraline and citalopram) have shown better efficacy and tolerability than tricyclic antidepressants. As such, SSRIs should be first-line treatment for depression in demented patients.

In the treatment of geriatric depression in the context of cognitive complaints, it is preferable to use agents with low anticholinergic activity to avoid further compromise in cognitive function. Thus, TCAs should definitely be avoided, and among the SSRIs, paroxetine, which is most anticholinergic, should be avoided.

From a practical standpoint as recommended by a consensus of geropsychiatrists,⁵⁵ the best approach to treating depression in nursing home patients would be to start out with an SSRI trial such as citalopram (20 to 30 mg), sertraline (50 to 100 mg), or paroxetine (20 to 30 mg). If a 6-week trial at adequate doses fails, then venlafaxine XR (75 to 150 mg), mirtazapine (15 to 30 mg), or bupropion SR (150 to 300 mg) can be tried. Starting dose in each case should be half of the lower dose of these suggested dose ranges (eg, 10 mg for citalopram), and as a rule titration should be gradual: “start low and go slow.” Treatment should be continued at the effective dose for at least 1 year. Psychotherapy should be added if appropriate and if resources are available. For minor depression or dysthymia, either medication alone or psychotherapy alone is appropriate. For psychotic depression, electroconvulsive therapy (ECT) or a combination of antidepressant and antipsychotic are recommended (Table 4).

Electroconvulsive Therapy and Emerging Biological Therapies

Although not a first-line treatment of depressive disorders for any age group, ECT remains the most effective short-term treatment for depression, particularly for severe depression and psychotic depression.⁵⁶ There is evidence for efficacy of ECT in the treatment of geriatric depression.⁵⁷⁻⁵⁹ Data suggest that, in general, older patients respond just as well as younger patients to ECT,⁶⁰ but response may not be as good in the subgroup of the

oldest old.⁶¹ Thus, ECT is a safe and effective treatment for older adults, and not contraindicated in nursing home patients.

Newer therapies for depression include the Food and Drug Administration (FDA)-approved Vagal Nerve Stimulation (VNS) for treatment-resistant depression, and repetitive transcranial magnetic stimulation (rTMS) for depression, which is not FDA approved. There are no studies of VNS in geriatric depression, and very few data regarding rTMS in geriatric depression. Thus, there is an absence of strong evidence to support the use of VNS and rTMS in treatment of depressed older adults, especially those in nursing homes, at the present time.

Light Therapy and Exercise

One study of institutionalized elders found that 30 minutes of bright light daily improved depression.⁶² Because increasing age has been associated with medical comorbidity and decrease in physical activity, the role of exercise has been explored in the treatment of depression. Aerobic exercise has been found to be as effective as medication in geriatric depression treatment at 16 weeks.⁶³ In 1 study of treatment of depressed patients with dementia in a nursing home setting, therapeutic biking with a “wheelchair bicycle” was found to be effective in treating depression, with gains maintained at 10-week follow-up.⁶⁴

Psychological Treatments

Use of psychotherapy in treatment of depression in the elderly is supported by evidence for many forms of therapy including cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), and bibliotherapy.⁶⁵⁻⁶⁷

In long-term care in particular, there are relatively few studies of psychological treatments,⁶⁸ most reporting short-term and sometimes long-term benefits of therapy on instruments measuring depression, hopelessness, self-esteem, perceived control, and other psychological variables. Many limitations of these studies include small sample sizes, variable study entry criteria, short duration of trials, heterogeneous outcome assessment methods, and lack of detail on intervention methods. More studies of nonpharmacologic approaches that can be efficiently delivered in long-term care settings are urgently needed.

PREVENTION OF DEPRESSION IN NURSING HOMES

Given the high prevalence of depression in nursing homes, it would be reasonable to ask if primary prevention measures can be implemented in this high-risk population. Unfortunately, we could not identify data to support this. There are emerging primary prevention studies for depression in high-risk older adults such as those with medical comorbidities,⁶⁹ and future research would do well to focus on institutionalized adults, another high-risk group that is rapidly expanding.

In conclusion, depression is widely prevalent in nursing home populations, and it is often under diagnosed and under treated. There are validated diagnostic tools, as well as an expanding evidence base for both biological and psychological treatments of depression in this population, even in those depressed patients with comorbid dementia. A challenge for the field is to implement the existing knowledge to improve outcomes, and to consider the possibility of group-based primary prevention initiatives.

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